

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1-17 (cancelled)

18. (New) A method for controlling an engine airflow, the engine having at least one cylinder, the engine also having an intake manifold and an outlet control device for controlling flow from the intake manifold into the cylinder, the outlet control device including variable valve lift, the engine having an exhaust system with a three-way catalytic converter and exhaust gas oxygen sensor, the method comprising:

generating a desired flow into the cylinder;

adjusting valve lift to provide said desired flow into the cylinder;

directly injecting fuel into the cylinder based on a signal from the sensor to maintain average air/fuel at stoichiometry during a stoichiometric mode of operation.

19. (New) The method of claim 18 wherein the sensor is located upstream of the three way catalyst.

20. (New) The method of claim 18 wherein the engine also has a throttle coupled to said intake manifold, the method further comprising adjusting said throttle based on an operating condition.

21. (New) The method of claim 18 wherein said desired flow into the cylinder is a cylinder air charge.

22. (New) The method of claim 18 wherein said adjusting further comprises adjusting valve lift based on an error between said desired flow into the cylinder and determined flow into the cylinder.

23. (New) The method of claim 18 wherein the engine is a v-type dual bank engine.

24. (New) The method of claim 18 wherein said directly injecting fuel further comprises directly injecting fuel into the cylinder during the intake stroke so that a substantially homogeneous air/fuel mixture is formed.

25. (New) A system for an engine with intake manifold comprising:

- an outlet control device controlling flow exiting the manifold and entering the engine, said outlet control device including variable valve lift;

- an inlet control device controlling flow entering the manifold, said inlet control device including an electronically controlled throttle plate;

- a fuel injector coupled to a cylinder of the engine capable of directly injecting fuel into the cylinder;

- an oxygen sensor coupled in an exhaust of the engine; and

- a controller determining a desired air amount, adjusting said outlet control device to provide said desired air amount, adjusting said inlet control device based on an operating parameter, and adjusting fuel injected directly into the engine via said fuel injector based on said oxygen sensor.

26. (New) The system of claim 25 further comprising a three-way catalyst coupled in said exhaust.

27. (New) The system of claim 26 wherein said sensor is located upstream of said three-way catalyst.

28. (New) The system of claim 25 wherein said desired air amount is a cylinder air charge.

29. (New) The system of claim 25 wherein said controller further adjusts said inlet control device based on an error between said desired air amount and a determined air amount.

30. (New) The system of claim 25 wherein the engine is a v-type dual bank engine.

31. (New) The system of claim 25 wherein said controller directly injects fuel into the cylinder during the intake stroke so that a substantially homogeneous air/fuel mixture is formed during a stoichiometric mode of operation.

32. (New) The system of claim 25 wherein said controller adjusts fuel injected directly into the engine via said fuel injector based on said oxygen sensor to maintain a stoichiometric air-fuel ratio.

33. (New) A system for an engine with intake manifold comprising:

- an outlet control device controlling flow exiting the manifold and entering the engine, said outlet control device including variable valve lift;
- an inlet control device controlling flow entering the manifold, said inlet control device including an electronically controlled throttle plate;
- a fuel injector coupled to a cylinder of the engine capable of directly injecting fuel into the cylinder during an intake stroke to form a homogenous air-fuel mixture;
- an oxygen sensor coupled in an exhaust of the engine;
- a three-way catalyst converter coupled in said exhaust; and

Application No.: Not Yet Assigned
Preliminary Amendment

Attorney Docket No.: FGTI-010DUS

a controller determining a desired air amount, adjusting said outlet control device based on said desired air amount, adjusting said inlet control device based on an operating parameter, and adjusting fuel injected directly into the engine via said fuel injector based on said oxygen sensor to maintain a stoichiometric air-fuel ratio.